IN THE CLAIMS

No amendments are made to the claims, which are reproduced for the Examiner's convenience as follows:

1. (ORIGINAL) A method of controlling a plurality of solar panels coupled to a spacecraft, comprising the steps of:

providing a first step command to a first solar panel; and

providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command;

wherein the second solar panel is disposed on an opposite side of the spacecraft from the first solar panel.

2. (ORIGINAL) The method of claim 1, wherein the first solar panel and the second solar panel are rotatable about a longitudinal axis, and at least one of the first solar panel and the second solar panel are tilted away from a spacecraft body pitch axis.

3. (ORIGINAL) The method of claim 1, wherein:

the step of providing a first step to the first solar panel comprises the steps of:

computing a first solar panel command;

providing the computed first solar panel command to a first solar panel driver;

the step of providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises the steps of:

computing a second solar panel command;

biasing the computed second solar panel command by a transient cancellation bias;

providing the biased second solar panel command to a second solar panel driver.

4. (ORIGINAL) The method of claim 3, wherein the transient cancellation bias is computed at least in part from a product of a desired time lag and a Sun-tracking angular rate of the second solar panel.

5. (ORIGINAL) The method of claim 3, wherein the transient cancellation bias is determined by terrestrially-based processors simulating the dynamic response of the spacecraft body to the first step command.

6. (ORIGINAL) The method of claim 3, wherein the transient cancellation bias is determined from terrestrially based testing of the dynamic response of the spacecraft body to the first step command.

7. (ORIGINAL) The method of claim 3, wherein the transient cancellation bias is estimated by a spacecraft processor.

8. (ORIGINAL) The method of claim 3, wherein the transient cancellation bias is estimated by space-based testing of the dynamic response of the spacecraft body to the first step command.

9. (ORIGINAL) The method of claim 3, wherein:

the step of providing a first step to the first solar panel further comprises the step of quantizing the first solar panel bias command;

the step of biasing the computed second solar panel command by a transient cancellation bias comprises the steps of

quantizing the second solar panel bias command;

computing a modified solar panel bias command at least in part from the sum of the quantized second solar panel command and the transient cancellation bias.

10. (ORIGINAL) The method of claim 9, wherein the first step command and the second step command are characterized by a step size, and wherein:

the first solar panel command is quantized to a least significant bit equal to the step size and to a value of a nearest step;

the second solar panel command is quantized to the least significant bit.

11. (ORIGINAL) The method of claim 1, wherein:

the step of providing a first step to the first solar panel comprises the steps of:

computing a first solar panel bias command;

computing the first step command at least in part from the first solar panel bias command;

providing the first step command to a first solar panel driver;

the step of providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises the steps of:

computing a second solar panel bias command;

computing the second step command at least in part from the second solar panel bias command;

providing the computed second solar panel bias command to the solar panel driver; and

biasing a second solar panel position by a transient cancellation bias.

12. (ORIGINAL) An apparatus for controlling a plurality of solar panels coupled to a spacecraft body, comprising:

a processor;

a first solar panel driver, communicatively coupled to the processor, for providing a first step command to a first solar panel; and

a second solar panel driver, communicatively coupled to the processor, for providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command;

wherein the second solar panel is disposed on an opposite side of the spacecraft from the first solar panel.

13. (ORIGINAL) The apparatus of claim 12, wherein the first solar panel and the second solar panel are rotatable about a longitudinal axis, and at least one of the first solar panel and the second solar panel are tilted away from a spacecraft body pitch axis.

14. (ORIGINAL) The apparatus of claim 12, wherein:

the processor computes a first solar panel bias command, computes a first step command at least in part from the first solar panel bias command and provides the computed first step command to the first solar panel driver; and

the processor computes a second solar panel bias command, biases the second solar panel bias command by a transient cancellation bias, computes a second step command at least in part from the biased second solar panel bias command, and provides the second step command to the second solar panel driver.

15. (ORIGINAL) The apparatus of claim 14, wherein the transient cancellation bias is computed at least in part from a product of a desired time lag and a Sun-tracking angular rate of the second solar panel.

16. (ORIGINAL) The apparatus of claim 14, wherein the transient cancellation bias is determined by terrestrially-based processors simulating the dynamic response of the spacecraft body to the first step command.

17. (ORIGINAL) The apparatus of claim 14, wherein the transient cancellation bias is determined from terrestrially based testing of the dynamic response of the spacecraft body to the first step command.

18. (ORIGINAL) The apparatus of claim 14, wherein the transient cancellation bias is estimated by a spacecraft processor.

19. (ORIGINAL) The apparatus of claim 14, wherein the transient cancellation bias is estimated by space-based testing of the dynamic response of the spacecraft body to the first step command.

20. (ORIGINAL) The apparatus of claim 12, wherein:

the processor computes a first solar panel bias command, quantizes the first solar panel bias command, computes a first step command at least in part from the quantized first solar panel bias command and provides the computed first step command to the first solar panel driver; and

the processor computes a second solar panel bias command, quantizes the second solar panel command, biases the quantized second solar panel bias command by a transient cancellation bias, computes a second step command at least in part from the quantized biased second solar panel bias command, and provides the second step command to the second solar panel driver.

21. (ORIGINAL) The apparatus of claim 20, wherein the first step command and the second step command are characterized by a step size, and wherein:

the first solar panel command is quantized to a least significant bit equal to the step size and to a value of a nearest step;

the second solar panel command is quantized to the least significant bit.

22. (ORIGINAL) The apparatus of claim 12, wherein:

the processor computes a first solar panel bias command, computes a first step command at least in part from the first solar panel bias command and provides the computed first step command to the first solar panel driver; and

the processor computes a second solar panel bias command, computes a second step command at least in part from the second solar panel bias command, provides the second step command to the second solar panel driver, and biases the second solar panel position by a transient cancellation bias.

23. (ORIGINAL) An apparatus for controlling a plurality of solar panels coupled to a spacecraft, comprising:

means for providing a first step command to a first solar panel; and

means for providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command;

wherein the second solar panel is disposed on an opposite side of the spacecraft from the first solar panel.

24. (ORIGINAL) The apparatus of claim 23, wherein the first solar panel and the second solar panel is rotatable about a longitudinal axis, and at least one of the first solar panel and the second solar panel are tilted away from a spacecraft body pitch axis.

25. (ORIGINAL) The apparatus of claim 23, wherein:

the means for providing a first step to the first solar panel comprises:

means for computing a first solar panel command;

means for providing the computed first solar panel command to a first solar panel driver;

the means for providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises:

means for computing a second solar panel command;

means for biasing the computed second solar panel command by a transient cancellation bias;

means for providing the biased second solar panel command to a second solar panel driver.

26. (ORIGINAL) The apparatus of claim 25, wherein the transient cancellation bias is computed at least in part from a product of a desired time lag and a Sun-tracking angular rate of the second solar panel.

27. (ORIGINAL) The apparatus of claim 25, wherein the transient cancellation bias is determined by terrestrially-based processors simulating the dynamic response of the spacecraft body to the first step command.

28. (ORIGINAL) The apparatus of claim 25, wherein the transient cancellation bias is determined from terrestrially based testing of the dynamic response of the spacecraft body to the first step command.

29. (ORIGINAL) The apparatus of claim 25, wherein the transient cancellation bias is estimated by a spacecraft processor.

30. (ORIGINAL) The apparatus of claim 25, wherein the transient cancellation bias is estimated by space-based testing of the dynamic response of the spacecraft body to the first step command.

31. (ORIGINAL) The apparatus of claim 25, wherein:

the means for providing a first step to the first solar panel further comprises means for quantizing the first solar panel bias command;

the means for biasing the computed second solar panel command by a transient cancellation bias comprises

means for quantizing the second solar panel bias command;

means for computing a modified solar panel bias command at least in part from the sum of the quantized second solar panel command and the transient cancellation bias.

32. (ORIGINAL) The apparatus of claim 31, wherein the first step command and the second step command are characterized by a step size, and wherein:

the first solar panel command is quantized to a least significant bit equal to the step size and to a value of a nearest step;

the second solar panel command is quantized to the least significant bit.

33. (ORIGINAL) The apparatus of claim 23, wherein:

the means for providing a first step to the first solar panel comprises:

means for computing a first solar panel bias command;

means for computing the first step command at least in part from the first solar panel bias command;

means for providing the first step command to a first solar panel driver;

the means for providing a second step command to a second solar panel at a time of a transient zero-crossing of a dynamic response of the spacecraft body to the first step command comprises:

means for computing a second solar panel bias command;

means for computing the second step command at least in part from the second solar panel bias command;

means for providing the computed second solar panel bias command to the solar panel driver; and

means for biasing a second solar panel position by a transient cancellation bias.